

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (*Currently Amended*) ~~An apparatus~~ Apparatus for the transmission and the reception of data comprising:

a plurality of links, each link comprising an input and an output, and inputs and a plurality of corresponding outputs for the respective coupling to the incoming part and outgoing part of a plurality of links, wherein, to each input and to each output[[,]] is associated a respective 2 × 2 switching device ~~(14₁, 14₂, 14₃, 14₄),~~

at least one active terminating board coupled to ~~for each couple of input and output~~[[,]] associated with a link ~~an active terminating board (12₁) for coupling this input and this output and for further transmitting data,~~

at least one spare terminating board that ~~(12₂) which is able to replace a defective active~~ terminating board,

the at least one ~~each~~ terminating board comprising means ~~(20₁) adapted to test the quality~~ of the link ~~(W)~~ to which it is associated and to compare said quality to a predetermined criteria ~~criterion~~ and to generate a control signal to first control means ~~(26₁, 28₁) of said each~~ terminating board, wherein the first control means replaces ~~being adapted to replace the defective~~

link by another link[[,]] if said this-quality does not comply with the predetermined criteria~~eriterium~~, and

second control means ~~(261, 41)~~ coupled to the at least one active and spare terminating boards ~~adapted~~ to modify the operation of at least one of said switching devices to replace a failed such that in case of failure of an active terminating board[[,]] it is replaced by the at least one spare terminating board,

wherein one terminal of each switching device is coupled to the corresponding input or output of a link, one terminal is coupled to the at least one active terminating board, one terminal is coupled to another switching device and the remaining terminal is coupled to another switching device or to the at least one spare terminating board.

2. *(Cancelled).*

3. *(Currently Amended)* The apparatus ~~Apparatus~~ according to claim 1, wherein the switching device associated to an input of a link and the switching device associated to the corresponding output of the link are coupled to each other and wherein the at least one spare terminating board comprises a device ~~(202, 282)~~ ~~adapted~~ to test the continuity of the coupling of these switching devices to the at least one spare this-terminating board.

4. *(Cancelled).*

5. (*Currently Amended*) The apparatus ~~Apparatus~~ according to claim 1, wherein the switching devices are of the optical type.

6. (*Currently Amended*) The apparatus ~~Apparatus~~ according to claim 1, wherein the switching devices are disposed on an ~~and their control means are all installed on a same applique panel (42), the at least one active and spare terminating boards are disposed on a~~ ~~all installed on the same terminating panel (46) and the coupling between the switching devices and the at least one active and spare is disposed~~ ~~terminating boards are realized on a back panel (44).~~

7. (*Currently Amended*) The apparatus ~~Apparatus~~ according to claim 1, wherein one spare terminating board (~~80~~) is provided for at least two active terminating boards (~~82, 84, 86~~) and the switching devices (~~14₁, 14₂, 14₃; 14'₁, 14'₂, 14'₃~~) for the inputs and outputs of the links are connected in series towards the spare terminating board.

8. (*Currently Amended*) The apparatus ~~Apparatus~~ according to claim 7, wherein the second control means (~~26₁, 41~~) for the switching devices establishes ~~establish~~ a priority among the active terminating boards when at least two active terminating boards fail ~~present a failure~~.

9. (*Currently Amended*) The apparatus ~~Apparatus~~ according to claim 1 wherein, in case of failure of an active terminating board, the second control means connects a (261, 41) of the ~~switching devices are such that this failed active terminating board is connected as a spare~~ terminating board.

10. (*Currently Amended*) The apparatus ~~Apparatus~~ according to claim 9 wherein, after replacement of a failed terminating board, the switching devices are connected to allow the control of the correct operation of the replaced terminating board.

11. (*Currently Amended*) The apparatus ~~Apparatus~~ according to claim 1, wherein all links are adapted to carry data with different priorities and wherein the second control means decides (41) are further adapted to decide, in case of link failure and/or terminating board failure, that the link carrying the data having the a highest priority will take over.

12. (*Currently Amended*) A method for controlling the operation of an apparatus for the transmission and reception of data, said apparatus comprising:

a plurality of links, each link comprising an input and an output, and each input and each output ~~[[.]] is associated a respective 2 × 2 switching device inputs and a plurality of~~
~~corresponding outputs for the respective coupling to the incoming part and outgoing part of a~~
~~plurality of links,~~

at least one active terminating board coupled to for each couple of input and output associated with a link,~~an active terminating board for coupling this input and this output and for further transmitting data,~~

at least one spare terminating board that ~~which~~ is able to replace a defective active terminating board,

the at least one each-terminating board comprising means (20₁) adapted to test the quality of the link (W) to which it is associated and to compare said quality to a predetermined criteria ~~eriterium~~ and to generate a control signal to first control means (26₁, 28₁) of said each terminating board, wherein the first control means replaces ~~being adapted to replace~~ the defective link by another link[[,]] if said ~~this~~ quality does not comply with the predetermined criteria~~eriterium~~, and

second control means (26₁, 41) coupled to the at least one active and spare terminating boards for controlling the replacement of a failed ~~an active terminating board in case of failure of the latter,~~ by a spare terminating board,

wherein one terminal of each switching device switch is coupled to the corresponding input or output of a link, one terminal is coupled to the at least one active terminating board, one terminal is coupled to another switching device and the remaining terminal is coupled to another switching device or to the at least one spare terminating board,

wherein said method comprises ~~the step of providing a switching device for each input and each output, and a step of controlling the switching devices with the second control means to~~ arrange their switch settings for modifying their operations and couplings to replace in such a

~~way that they realize the replacement of a failed active terminating board by a spare terminating board.~~

13. *(Cancelled)*.

14. *(Currently Amended)* The A-method according to claim 12, wherein the method further comprises ~~comprising the step of coupling to each other the switching device associated to an input of a link and the switching device associated to the corresponding output of the link and the step of testing the continuity of the coupling of these this-switching devices device to the at least one spare this-terminating board.~~

15. *(Cancelled)*.

16. *(Currently Amended)* The A-method according to claim 12, wherein the method further comprises ~~comprising the step of installing the switching devices and their control means on a same applique panel (42), the step of installing the at least one active all and spare terminating boards on a the same terminating panel (46) and the step of realizing the coupling between the switching devices and the terminating boards together using on a back panel (44).~~

17. (*Currently Amended*) The ~~A~~ method according to claim 12, wherein the method further comprises ~~comprising the step of~~ providing one spare terminating board (80) for at least two active terminating boards (82, 84, 86) and ~~the step of~~ connecting in series the switching devices (14₁, 14₂, 14₃; 14'₁, 14'₂, 14'₃) for the inputs and outputs of the links towards the spare terminating board.

18. (*Currently Amended*) The ~~A~~ method according to claim 17, wherein a priority is established by the second control means (26₁, 41) ~~for the switching devices establish a priority~~ among the active terminating boards when at least two active terminating boards ~~fail~~ present a failure.

19. (*Currently Amended*) The ~~A~~ method according to of claim 12 wherein, in case of failure of an active terminating board, the method further comprises controlling the switching devices to connect the ~~are controlled in such a way that this failed active terminating board is~~ ~~connected~~ as a spare terminating board.

20. (*Currently Amended*) The ~~A~~ method according to claim 19 wherein, after replacement of a failed terminating board, the method further comprises connecting the switching devices to ~~are connected to allow the control of the correct operation of the replaced terminating board~~.

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U.S. APPLICATION 09/986,687
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21. (*Currently Amended*) The ~~A~~-method according to claim 14, wherein all links are used for carrying data with different priorities and wherein, in case of a link failure and/or a terminating board failure, the method further comprises that the link carrying the data having a highest priority will take over.